

NEW DIRECTION IN VAPOR EXTRACTION TECHNOLOGY (RASD-VAPEX) AND ITS ECONOMIC BENEFITS

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- THE BEGINNING: SOLVENT ANALOG MODELS OF SAGD
- ORIGINAL VAPEX: STEAM / HOT WATER-LOW BOILING POINT HYDROCARBONS
- SHORTCOMINGS AND PITFALLS OF SIMPLE VAPEX
- THE NEED FOR A VERSATILE VAPEX SOLVENT
- THE NEED FOR A CONTINUOUS DEW POINT MODIFICATION
- THE NEED FOR A PROPER H – WELL CONFIGURATION
- RASD-VAPEX: A STEP-UP TO THE REAL-WORLD HEAVY OIL RESERVOIRS
- ECONOMICS INTRO: THE CONCEPT OF 1st & CONSECUTIVE PROJECTS
- DISCOUNTED CASH FLOW ECONOMIC MODEL
- SIMPLE VAPEX ECONOMICS
- RASD-VAPEX ECONOMICS AND CONCLUDING THOUGHTS

SECTION 1: BASIC CONCEPTS

- TOLUENE-BITUMEN LEACHING: ANALOGY WITH SAGD
- SPREADING SOLVENT CHAMBER
- RISING SOLVENT CHAMBERS
- STEP-UP TO SATURATED-VAPOUR SOLVENT
- SPEEDING UP THE LEACHING PROCESS
- INITIAL COMMUNICATION PATH
- INJECTIVITY PROBLEMS
- THE IMPORTANCE OF CONTACT AREA: PLANAR WELL
- SUMMARY

SECTION 2: BASIC CONCEPTS AND ECONOMICS

- ORIGINAL VAPEX: A THERMAL PROCESS
- SHORTFALLS OF SIMPLE VAPEX
- REVIEW OF VAPEX SOLVENTS
- CONTINUOUS DEW POINT ADJUSTMENT
- RASD-VAPEX
- ADDITIONAL BENEFITS
- ECONOMIC MODEL INTRODUCTION
- MARKET ANOMALY
- 1st AND SUBSEQUENT PROJECTS
- SUMMARY

SECTION 3: SIMPLE VAPEX ECONOMICS

- CASH FLOW FORECAST (1st PROJECT)
- CASH FLOW FORECAST (SUBSEQUENT)
- INJECTION - PRODUCTION PROFILE (SIMPLE)
- INJECTION - PRODUCTION PROFILE (RASD)
- ASSUMPTIONS FOR CALCULATIONS
- ECONOMIC VIABILITY 1990 - 2000
- IMPORTANCE OF SOLVENT RECOVERY
- OPTIMIZATION OF PATTERN SIZE
- SUMMARY

SECTION 4: RASD-VAPEX ECONOMICS

- **IMPORTANCE OF PAYZONE THICKNESS**
- **INVESTMENT PER PATTERN VOLUME**
- **EFFECT OF LO, HO AND C₃ PRICING**
- **EFFECT OF LO - HO AND HO - C₃ DIFFERENTIAL**
- **EFFECT OF PATTERN SIZE ON ECONOMIC DRIVERS**
- **OPTIMIZING PATTERN SIZE FOR BEST ECONOMY**
- **VAPEX ECONOMIC VIABILITY 1998 - 2000**
- **SUMMARY**

CONCLUDING THOUGHTS:

- **COMPARISON WITH OTHER PROCESSES**
- **SUMMARY OF MAJOR FACTORS**
- **VAPEX ECONOMIC POTENTIAL**
- **ENERGY REQUIREMENTS**
- **CO₂ EMISSIONS**
- **VAPEX ENERGY EFFICIENCY**
- **WATER**
- **CUTTING EMISSIONS AT THE SOURCE**
- **VAPEX MERITS AND RELEVANCY**